Homework 6: Logical Operators

CS 1323 Fall 2023

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1. (15 points; 3 points each part) Given the variable assignments below, is each logical expression true or false? If the statement is not legal in Java, say so. Show your work step by step. Answers alone will not receive credit since they can be calculated by eclipse. If a logical operator shortcuts, say so.

```
int little = 6;
int big = 2;
int size1 = 5;
int size2 = 9;
```

a) (little > big) && (size2 > big) (6 > 2) && (9 > 2)

The expression true because both operands are tru, 6 is greater than 2 and 9 is also greater than 2.

b) size1 < size2 | | big < little && size2 == big

5 < 9 | | 2 < 6 && 9 == 2

The expression is true because 5 < 9 is true and when using || the result of operand will always be true since the second operand isn't evaluated

c) ! little < big

| !6 < 2

The expression is true since the 6 < 2 is false

d) little < size1 | | little < size2 | | little > big

6 < 5 || 6 < 9 || 6 > 2

The expression is true since one of the operands is true

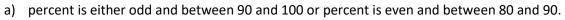
e) 0 <= size1 <= 10

0 <= 5 <= 10

This statement is not legal in java.

	understand as possible, using DeMorgan's Law if necessary.
	boundary conditions (e.g. < versus <=). Make your expressions as clear and simple to
	boolean expression that is legal in Java. Use the given variable. Pay careful attention to
2.	(5 points; 3 points each for a) and 2 points for b)) Translate each statement below into a

int percent;



((percent % 2 == 1) && (percent > 90 && percent < 100) || (percent % 2 == 0) && (percent > 80 && percent < 90))

b) percent is not between 0 and 100 (inclusive)

!(percent >= 0 && percent <= 100)